

**"METHOD AND SYSTEM FOR INCLUSION HASH JOINS AND  
EXCLUSION HASH JOINS IN RELATIONAL DATABASES"**

**ABSTRACT OF THE DISCLOSURE**

[0043] A method, system and apparatus for performing an inclusion hash join and  
5 an exclusion hash join are provided. The method enables the joining of an outer table and  
an inner table in a database in response to a SQL statement having an inclusion or exclusion  
operator while using a hash join to conserve system resources. The method of the present  
invention transposes the inner and outer tables to left and right tables, respectively. Next, a  
hash table is created from the left table. Thereafter the right table is scanned to obtain hash  
10 values that are used to probe the hash table. If the right table hash value matches one of the  
values in the hash table, the corresponding right table row is evaluated to determine if actual  
values match and, if so, include the current row of the outer table in the result and further  
processing for that row is terminated. If an exclusion condition is present, then the hash  
table is probed with the hash value of the row of the right table to determine if a match is  
15 present. If none of the hash values match, then the exclusion condition is satisfied and the  
outer table row is added to the result and further processing for that row ends and the next  
row is addressed. If one or more of the hash values match, then the actual values are  
compared to determine if the exclusion condition is satisfied.